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Editor - Captain L. B. Marshall, MC, USN

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Policy

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The printing of this publication has been approved by the Director of the Bureau of the Budget, June 23, 1952.

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Short Esophagus With Esophagogastric or Marginal Ulceration

This report describes the roentgen and esophagoscopic findings in 29 cases of short esophagus with peptic ulceration at the esophagogastric junction. Short descriptions of the symptomatology and the treatment of these cases are also included.

It is difficult to choose a satisfactory designation for this entity, because there is still considerable reservation as to its pathogenesis. The difficulty lies in the uncertainty as to whether the short esophagus demonstrable at the time of the examination is congenital or acquired. An additional confusing factor is the circumstance that, even though the final state may be in largest part acquired, congenital predisposing factors may be necessary. The authors described the findings in their cases without making assumptions as to their pathogenesis. The term "short esophagus" as used in this article indicates that the esophagogastric junction is located above the esophageal hiatus of the diaphragm and that the esophagus is not redundant. The esophagus was seen to be short both on roentgen and on esophagoscopic examination, although neither of these diagnostic methods permits differentiation of congenital from acquired shortening. In a similar fashion, for convenience of description, the gastric pouch above the diaphragm, which must be present in every case of short esophagus, may be designated as a "hiatus hernia." The use of the latter term to include both acquired and congenital pouches has a precedent, because in Akerlund's basic contribution on hiatus hernias both congenital and acquired types were described.

There were 3 constant features in the authors' series of cases: (a) The esophagus was short, i.e., the junction of the esophagus and the stomach, as determined by the nature of the lining epithelium, was above the esophageal hiatus of the diaphragm. (b) Free reflux or regurgitation of gastric contents into the gastric pouch above the diaphragm and from the pouch into the esophagus had occurred. (c) Ulceration at the esophagogastric junction was demonstrated.

It is well known that the x-ray criteria for the identification of the esophagogastric junction are frequently equivocal. However, in the cases in this series, because of the presence of inflammatory changes or stenosis, there was no difficulty in recognizing the fact that this junction was above the hiatus in the diaphragm. Moreover, the gastric pouches in these cases were of sufficient size--3 cm. or more in diameter--that a typical configuration and a gastric mucosal pattern were usually demonstrable. Occasionally, in a case of severe stenosis of the esophagogastric junction, re-examination after dilatation was required before sufficient barium would pass the site of narrowing to outline the gastric pouch adequately. The distance from the incisor teeth to the esophagogastric junction was carefully measured along the rigid esophagoscope. This distance ranged from 25 to 37 cm. as compared with the normal distance of 38 to 40 cm.

Regurgitation of gastric contents into the esophagus was demonstrated on roentgen examination by procedures outlined. Little diagnostic significance was attributed to regurgitation of only small amounts of barium, particularly if this occurred after a considerable interval or as a result of maneuvers which significantly increased intra-abdominal pressure. In the presence of marked stenosis, insufficient barium may enter the stomach to permit the demonstration of regurgitation by roentgen methods. However, at esophagoscopy, free retrograde flow of gastric juice into the esophagus was noted in every case, before the tube entered the hernia sac, despite the fact that occasionally the esophagogastric junction was no more than 2 mm. in diameter. When tested with litmus paper, the regurgitated juice always gave an acid reaction.

The diagnosis of peptic ulceration was made by the observation esophagoscopically of a discrete ulcerated area, biopsy of which was reported by the pathologist as showing the "changes characteristic of a chronic peptic ulcer as seen in the stomach or duodenum." The term "ulceration" is used rather than "ulcer," because the ulcerated area is superficial and rarely has a punched-out ulcer appearance with elevated or indurated edges. In each of the authors' cases the ulceration was "marginal," that is, it was surrounded by esophageal mucosa except at its distal border, where gastric mucosa was always visualized. Biopsy confirmed these observations. According to Allison et al, the ulceration is not necessarily marginal but may be within 1 cm. of the esophagogastric junction. The fact that in several instances biopsies showed gastric mucosa bordering the ulcer in a single section contradicts the suggestion of Allison and his associates that a prolapsing cuff of gastric mucosa is mistaken by the esophagoscopist as the distal margin of the ulcer. In several cases, biopsies were taken at multiple levels below the ulceration, and all showed exclusively gastric mucosa. These findings ruled out the possibility that the gastric epithelium seen at the distal edge of the ulceration was "ectopic." On the contrary, the pouch below the ulceration was lined by continuous gastric mucosa.

In many instances, the mucosa of the esophagus for a variable distance proximal to the ulceration appeared reddened and edematous, sometimes with areas of leukoplakia--that is, an esophagitis was associated with the marginal ulcer. Marked narrowing of the esophagus itself, as seen in severe esophagitis, was not observed. However, while the degree and extent of the associated esophagitis were quite variable, the finding of the discrete marginal ulcerated area was constant.

The most significant findings on roentgen examination were:

(1) A short esophagus entering at the apex or summit of a gastric pouch. The esophagus, the gastric pouch, and the fundus of the stomach joined each other without any abrupt or acute angulation.

(2) Effacement of the mucosal pattern and changes in distensibility in a short segment at the junction of the esophagus and the gastric pouch. The esophagogastric junction corresponds to the lower border of this marginal

or junctional segment. Because an ulcer crater within this segment was demonstrated in only 6 of the 29 cases, the roentgen diagnosis of marginal ulceration must be based on these more indirect findings.

(3) If stenosis was not marked, there was free reflux of barium from the stomach into the esophagus.

Review of the films suggested that the group as a whole could be divided into two varieties with differing roentgen features. The first type was characterized by the presence of definite stenosis and obstruction in the marginal segment, while the second variety showed no absolute narrowing and no delay in the passage of the barium mixture.

Treatment in this series was limited to symptomatic therapy and esophageal dilatation. The authors have had as yet no significant experience with surgical intervention. Medical treatment consisted of a strict ulcer regime with antacids and Banthine. This latter drug occasionally relieved heartburn, apparently by producing a mild spasm at the cardia. Dysphagia, however, may be increased. The patient was advised to avoid those postural attitudes which cause regurgitation and to sleep with the head elevated.

Medical symptomatic treatment was rarely satisfactory for any great length of time. With the onset of dysphagia, instrumental dilatation was required. Esophagoscopy with bouginage and the use of a Hurst mercury-weighted tube were recommended in both stenotic and nonstenotic cases if dysphagia was a prominent symptom. In the group with stenosis, progressive dilatation with Jackson bougies was required. In severe cases, esophagoscopy with dilatation was necessary once or twice a week for several weeks until an adequate lumen, 30 to 36 French, was obtained. The patient was then instructed in the use of a Hurst mercury-weighted tube, which was passed twice a day before meals. As symptoms subsided, the mercury-weighted tube was used less and less frequently until, in a majority of cases, a considerable free interval occurred during which no instrumental dilatation was required. Recurrence of symptoms after a variable period, perhaps months, was not infrequent, and repeated courses of instrumental dilatation may be required. In the most severe cases, with severe malnutrition, it may be necessary to introduce a Levin tube into the stomach for purposes of alimentation. This is a highly undesirable procedure but may tide the patient over a difficult period.

Surgical therapy of the stenotic group of cases of marginal ulceration required esophagogastrectomy. Unfortunately, however, simple esophagogastrectomy was frequently followed by regurgitation, and recurrent esophageal ulceration may be anticipated. Simultaneous vagotomy and resection of the acid-producing portion of the stomach were recommended in order to produce an achlorhydria. (Radiology, Oct. 1953, B.S. Wolf, M.D., M. Som, M.D., and R.H. Marshak, M.D.; Department of Roentgenology, The Mount Sinai Hospital, New York, N.Y.)

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Radiation Therapy for Bronchogenic Carcinoma

Radiation therapy is a useful adjunct in the treatment of advanced cases of bronchogenic carcinoma to stop bleeding, to lessen severe chest pain, and for other reasons of symptomatic relief. In general, it is accepted that radiation therapy using conventional x-ray voltages is not able to deliver more than 3,000 r of tumor dose to all of the involved lung region including the mediastinal and supraclavicular nodes and that this dose is inadequate for the control of the disease.

In cooperation with the Massachusetts Institute of Technology, the Lahey Clinic has undertaken the radiation treatment of malignancies, including carcinoma of the lung, using 2-million-volt roentgen rays. At first, patients chosen for treatment were those with advanced disease or with lesions in regions not favorable for surgery. Although each patient had a biopsy or operation before treatment, 4 of the cases that came to autopsy were proved to be other than primary carcinoma of the lung. Nevertheless, a review of this limited clinical data shows that patients tolerate higher and more adequate doses of supervoltage radiation and that certain procedures using such radiation may significantly improve the management of patients with carcinoma of the lung.

The availability at the Institute of a 2-million-volt x-ray source, with an output equivalent to that of 5,000 gm. of radium, made feasible the delivery of a larger quantity of radiation without damage to the skin and subcutaneous tissues. The authors' first step was to determine the lethal tumor dose and how rapidly this dose could be delivered to the patient and still be tolerated. They wanted to produce as little damage as possible to normal tissue and yet cover not only the involved lung but also the mediastinum and the supraclavicular regions. Studies made by McCort on lymphatic spread indicate that a wider field must be used when treating carcinoma of the left lung than when treating carcinoma of the right lung. It was also evident from the authors' studies that the supraclavicular region on the involved side must be included in the field as well as the entire mediastinum. The authors decided upon a total dose of 6,000 r to be delivered in 35 treatment days at a rate of 170 r per day, this dose being measured at the mid-depth in the chest.

It became apparent after treating a few patients that this dosage was tolerated well so far as the skin and subcutaneous tissues were concerned, and many patients were relieved of their symptoms during and following treatment. When large lung areas were included in the field, however, a moderate to severe radiation pneumonitis set in usually after several months, and the authors found themselves several times dealing with a problem almost as difficult as the symptoms produced by the primary tumor. It also became clear that although the primary lesion and the mediastinal nodes apparently were being destroyed in patients with advanced disease, metastatic hematogenous spread usually caused the death of the patient.

The preferred plan is to deliver to all of the probably invaded region a preoperative radiation dose as close to 6,000 r as possible. Subsequent surgical removal, if indicated, would permit a histologic study of the effect of radiation and avoid the occasional complications due to radiation effects. In other cases, the plan was to give a certain dosage of x-rays (about 3,000 r tumor dose), then remove the lung surgically making a histologic study of the lesions removed, and continue on to what the authors believed might be tumorcidal dose for cancer of the lung.

This latter plan would present an almost ideal form of treatment because it would make operable many of the questionable or borderline operable cases and it would allow determination of the effect of radiation on tumor tissue. The patients who received radiation followed by surgery and then further radiation were treated too recently to draw conclusions concerning symptomatology and longevity and these cases are not included in this series. No surgical difficulties have been encountered as the result of 4,000 r to the tumor, and further experience is desirable on the best value for this postoperative dose and the optimum time to surgery.

From the authors' studies it appears that supervoltage radiation offers the possibility of a more successful approach to the treatment of some of the carcinomas of the lung. While radiation alone to the involved regions carried to doses of 6,000 r in 35 treatment days appears to have controlled advanced disease in isolated cases, the combination of gamma radiation and surgery may have advantages. Histologic studies, on this limited series of patients, indicate that the authors may have closely approached an adequate tumor dose, and that there has been no difficulty with spread of the disease to lymph nodes in the fields treated with this quantity of radiation. (Geriatrics, Oct. 1953, H. F. Hare, M. D., Los Angeles Tumor Institute, C. R. Souders, M. D., M. Cote, M. D., Department of Radiology, Lahey Clinic, J. G. Trump, D. Sc., R. C. Granke, and K. A. Wright, Massachusetts Institute of Technology)

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Hürthle Cell Carcinoma

The so-called Hürthle cell tumor of the thyroid represents one of the less common neoplasms of this gland. There are relatively few case reports of this malignant tumor as compared with numerous reports of other types of carcinoma of the thyroid. The lesion is of interest from the varied viewpoints of etiology, pathology, and treatment. This article reports on 22 cases of Hürthle cell carcinoma diagnosed and treated on the Yale University Surgical Service and the Grace-New Haven Community Hospital during the years 1927 to 1952 inclusive.

In the past the lesion was thought to represent a benign tumor which had malignant potential and was classified in this manner by Warren. More

recently, however, there has been a realignment of thought, and the tumor is now considered to be malignant. The most recent edition of the "Manual of Tumor Nomenclature," prepared by the American Cancer Society in 1951, has abandoned the designations "Hürthle cell tumor" and "Hürthle cell adenoma" as being obsolete and vague, and suggests that the terms no longer be used. Instead, the malignant nature is emphasized and the designations "Hürthle cell adenocarcinoma" and "Hürthle cell carcinoma" are recommended. The term "Hürthle cell" is used throughout this report to avoid confusion.

Hürthle cell carcinomas are most commonly found in women over the age of 40 years. In this series 86% of the patients were female, and 82% were more than 40 years of age. The youngest patient was 16 years and the eldest was 75 years of age.

This tumor behaves much the same as a solitary adenoma of the thyroid. It usually occurs in patients who have no antecedent history of thyroid dysfunction. A few patients display clinical hyperthyroidism.

Physical examination revealed diffuse thyroid enlargement in 60%, while multiple nodular enlargement was noted in 13% of the present series. A solitary thyroid nodule was present in 8 patients (contralateral diffuse enlargement was present in 2 of these patients also). Palpable cervical lymph nodes were noted in 2 patients, but in only 1 patient did these ultimately prove to be metastatic disease. Distant metastases were found in no patient during the first visit and they eventually developed in only 1 patient in the series.

Laboratory examinations such as determination of serum iodine level and basal metabolic rate proved disappointing, because no definite abnormal trend was noted. In the present group 5 of 7 serum iodine determinations and 8 of 14 basal metabolic rate determinations showed normal values. When chest roentgenograms (with or without esophageal studies) are made, abnormalities are almost always noted. In 13 patients in this series such films revealed abnormalities (esophageal pressure defects, tracheal shift, or substernal mass) in all of them.

Hürthle cell carcinoma usually resembles a benign adenoma clinically, but it can metastasize widely and therefore should always be considered as malignant and treated accordingly.

From the experience in this series it is also clear that all solitary nodules of the thyroid should be surgically excised, preferably by lobectomy.

Radical neck dissection should be reserved for those cases in which there is clinical evidence of spread of the tumor, or in which there is residual or recurrent tumor.

External irradiation and radioactive iodine have not proved effective in treating Hürthle cell carcinoma. (Arch. Surg., Oct. 1953, I.S. Goldenberg, M.D., Grace-New Haven Community Hospital, New Haven, Conn.)

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Laryngectomized Speech

The quality of laryngectomized speech depends on early training after operation. Occasionally a patient stumbles into an excellent method without formal training. However, formal instruction decreases the chance of development of defective speech habits and mannerisms associated with laryngectomized speech, or esophageal speech. Common defects found with poor instruction or lack of instruction are: (1) loud emission of air through the tracheal stoma while attempting speech, (2) unnecessary lip movement, (3) a tendency to revert to buccal, or whispered, speech, (4) audible efforts at swallowing, (5) superficial movements of the arms, body, and head, and (6) dyslalic speech.

This article evaluates therapeutic technique which will not conflict with the functional status of the organism. Before initiating a speech rehabilitative program for a laryngectomized patient, it is wise to evaluate the prospective procedure in terms of its effect. It is not conceivable that all persons can belch at will. The patient who is instructed to swallow air (into the esophagus) and belch may find difficulty in regurgitating the air; probably an air bubble is accumulating at this time in the stomach.

The rehabilitation of speech of the laryngectomized patient "ideally" should begin before surgery. This stage of rehabilitation involves: (1) explanation of the operation, the reason for the operation, and the effect of the operation upon the individual, (2) explanation of the use of laryngectomized speech as a therapeutic technique, with initial exercises, and (3) the answering of questions frankly.

After the operation speech therapy should begin as soon as medically feasible. Depending upon the healing of the patient, postoperative therapy can generally start within 2 to 6 weeks.

In the initial postoperative therapeutic session the role of the speech mechanism should be explained. The patient must understand the loss of verbal communication through this type of surgery as related to speech and body functioning, so that he can understand the therapeutic program. Understanding by the patient creates a progressively steadier acceleration of rehabilitation.

During the explanation of laryngectomized speech, the patient should be made to understand that the body process in speech is reversed in reference to breathing. During normal speech production a person exhales air as he speaks, but in laryngectomized speech he holds his breath.

A scale of advancement should be presented to the patient so that at all times he and the therapist understand their present status and know what the next step will be.

Because not everyone can belch at will, and to avoid changing the organic relationships of the body by congesting the stomach with superfluous air, the following method should be used. Rather than have the patient swallow air into the esophagus and stomach as the primary location of the

air for initial speech, the patient is instructed to constrict the pharyngeal muscles and the diaphragmatic muscles at the start of voluntary swallowing. With this method he will not swallow air into the esophagus.

Following are the 5 basic steps in the initial stage of learning laryngectomized speech:

1. The patient is instructed to take a normal inhalation of air.
2. After inhalation, the patient should hold his breath.
3. While holding his breath the patient should collect the accumulated air in the oral cavity and transfer it to the pharyngeal cavity. The bolus of air is then subjected to the initial stage of voluntary swallowing.
4. Immediately upon initiating voluntary swallowing, the patient is instructed to constrict the pharyngeal and diaphragmatic muscles. The constriction will produce a continuant sound.
5. The patient is then instructed to exhale.

When the patient has control of the continuant sound, he should start to use words. If he initiates the usage of words by articulating monosyllabic words, control of extensive verbalization, satisfactory for fluent articulate speech, will develop.

The first words that a laryngectomized person should attempt are: bar, look, see, has, can, spot, once, day, how, are, and you. Besides these words the patient should attempt to say his name and address, plus the names of his immediate family. The ability to say his name is important psychologically. He feels greater security when he can pronounce his name rather than resort to a pencil and paper.

After the patient can pronounce the monosyllabic words he should proceed to the bisyllabic. While he is learning to say monosyllabic words he should also attempt simple sentences, using one word at a time. (Arch. Otolaryng., Oct. 1953, 535 N. Dearborn St., Chicago 10, Ill., H. E. Rickenberg, M. A.)

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Cystectomy of Urinary Bladder

The treatment of carcinoma of the urinary bladder has been a discouraging chapter in the field of urology. As long as surgery has been the most successful method of controlling cancer, early and wide excision of the neoplasm has been the desired goal. Wherever possible, removal of the entire involved organ with the surrounding adipose tissue and local lymph nodes was the method of choice. In the case of the urinary bladder complete excision included removal of the prostate and seminal vesicles. Diversion of the urine was also necessary.

Early attempts at cystectomy carried with them an alarming immediate mortality, partly due to technical difficulties and also as a result of implantation of the ureters into the bacteria-laden bowel. The method was,

therefore, temporarily abandoned. The more conservative methods of treatment, especially local excision and electrocoagulation, either transurethrally or through the open bladder subsequently enjoyed wide popularity. Judged by fundamental standards they were unsurgical. Few cases were permanently cured. But the relative ease of their performance, and the fact that the tumor was temporarily controlled seemed to justify their employment. Even though repeated treatments were often necessary, many patients lived relatively comfortable and useful lives for long periods of time. The length of hospitalization was within reasonable limits, the postoperative comfort was satisfactory, and the economic drain upon the patient was not too great.

During the past decade, largely as a result of improvement in surgical techniques and after-care, cystectomy has again enjoyed wide popularity. The improvement of the technique of cystectomy by Hinman, Higgins, Millin, Couvelaire, Ferris, Priestley, and others, and of the technique of ureterosigmoidostomy by Jewett, Hinman, Weyrauch, Schinagel, Flocks, Leadbetter, Nesbit, Cordonnier, and many other investigators have placed the total operation within the reach of every competent operator. Preoperative bowel sterilization with modern agents has assured the healing of the implant and almost eliminated the immediate threat of postoperative pyelonephritis. A better understanding of fluid and electrolyte balance and the liberal use of blood transfusion have also helped to reduce the immediate mortality of the total operation to reasonable levels. Leadbetter and others have sought to improve the ultimate cure rate by wide removal en bloc of the pelvic adipose tissue and local lymph nodes.

Unfortunately most of the publications have concerned themselves mainly with operative technique and immediate results. Statistics as to 5- and 10-year survivals have been far too infrequent. Little is mentioned as to length of hospitalization, the general postoperative comfort of the patient, his emotional adjustment to his situation, and the complications which might occur. Recently Colby has demonstrated how poorly the long-term survivals after cystectomy compare with those of cases treated by more conservative measures.

At the Hines Hospital, the authors have treated 402 cases of carcinoma of the urinary bladder from 1945 to 1952. During this period they performed 50 cystectomies and carried out diversion of the urine without removing the bladder in an additional 36. This series is far too small for an accurate statistical analysis, especially because so many factors were involved. Some of these cases were also too recent for a 5-year follow-up. The authors do believe, however, that an objective appraisal of the results at this time may be of some value.

Thirty-eight patients, 76% have died: 29 during the first year, 3 the second year, 3 the third year, 1 the fourth year, and 2 the fifth year. The greatest mortality was in the first year (76%). Ninety percent of the fatal cases succumbed within 3 years.

Twelve patients are still alive: 1 for 0 to 1 year, 4 for 1 to 2 years, 3 for 2 to 3 years, 1 for 4 to 5 years, and 3 for 5 to 6 years.

Twenty-six of the fifty patients, or 52%, had demonstrable preoperative damage to the upper urinary tract. Four of these are still alive. Of the 24 patients without such damage, 8 are still alive. That previous damage to the upper tract adversely affects the outcome is obvious.

That ureterocutaneous implantation was safer than ureterosigmoid anastomosis in the presence of upper urinary tract damage is shown.

So far in this series there have been 6 long-term survivors (4 to 6 years). The bladders were soft on rectal palpation under anesthesia in all of these, and subsequent pathologic examination of the excised bladders revealed either no involvement or only superficial infiltration of the muscular wall. Two patients have, nevertheless, since died of metastases.

In 14 of the patients who returned to the hospital to die autopsy was obtained. In 10 pyelonephritis was demonstrable, and 5 had metastases.

Although a few brilliant results have been obtained, the over-all picture has been discouraging. The immediate postoperative mortality has not been high. The long-term survivals have, however, been poor, the morbidity high, and the emotional depression and general misery of the patients have often been extreme. At first the authors inclined to ascribe this to their poor technique, but eventually they realized that these results were due to conditions which were beyond their control.

It must be recognized that in spite of brilliant developments in technique and after-care, the operation of total cystectomy is a formidable procedure for the patient. The surgeon frequently hesitates to recommend it and the patient refuses to submit to the operation until the tumor has grown out of hand and is beyond control by more conservative measures. It is then too late to expect a long-term survival and a possible cure. Unless the bladder is soft on rectal palpation and it practically falls out at operation it is too late for radical surgery. All of the 6 long-term survivors (4 to 6 years) had soft bladders which came out easily. Even so, 2 have since died of metastases (at 48 and 58 months) and a third now has clinical evidence of metastases (at 61 months).

Cystectomy is not justified as a palliative procedure in advanced carcinoma of the urinary bladder.

The indications for total cystectomy should, therefore, be placed with great caution and reserved for those cases in which no other form of treatment offers a prospect of relief. (Surg., Gynec. & Obst., Nov. 1953, F. A. Lloyd, M. D., and G. Baumrucker, M. D.; Department of Urology, Veterans Administration Hospital, Hines, Ill.)

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Urological Complications Following Abdominoperineal Resection of the Rectum

This review regarding the urological complications after abdominoperineal resection of the rectum or rectosigmoid is based on a review of 105 patients who had this operation. The authors have attempted to formulate a set of conclusions which they hope may serve as an aid in preventing the urological complications most frequently associated with this operation. All resections of the rectum were done for carcinoma, except in 2 patients. One operation was performed on a paraplegic for severe ulcerative colitis and the other for an extensive benign polyposis of the rectum.

Two series of patients were studied. The first group was evaluated on the basis of a 2-year postoperative follow-up examination. The second group was followed through completely from the preoperative and postoperative examinations over a 1-1/2-year postoperative period. In the first series, 49 patients came to surgery in the 2-year period of 1947 and 1948. Of these, 16 died within this 2-year period. In the second series, 56 patients came to surgery in the years 1949-1951, and, of these, 7 died in the year and a half postoperative follow-up period. Of the 2 series of 105 patients, there were 2 preliminary ureteral implants into isolated segments of the ileum, or cecal pouch, done because of anticipated cystectomy. One patient died of homologous serum jaundice 1 month postoperatively. The other died of coronary thrombosis 3 weeks postoperatively.

The urologic complications in this group of 105 patients were, in the order of frequency: bladder dysfunction in the form of postoperative urinary retention, ureteral injuries, and perineal fistula. The most important complication from the standpoint of immediate postoperative care was associated bladder dysfunction. The 2 other complications may be considered more or less matters of surgical technique, although all 3 were, in the final analysis, due directly or indirectly to the surgery. In considering the 2 less important complications first, it is to be noted that ureteral injuries can be troublesome and, if bilateral, can be fatal. They occur in an over-all estimate of 6% of the patients operated on. In this series there were 6 ureteral injuries--3 left, 1 right, and 1 bilateral.

The following set of rules was used as a guide for the prevention of the more serious postoperative complications:

1. Preoperative examination of the patient was done to determine the differential kidney function, bladder pressure, and status of the bladder neck. This can be completely covered by a preoperative intravenous pyelogram, rectal examination, and residual urine determination.
2. Preoperative transurethral resection of an obstructing bladder neck was done whenever such was present.
3. Preliminary insertion of ureteral catheters should be a routine procedure of this operation.

4. A urethral catheter was inserted postoperatively for at least 10 days to 2 weeks and was covered by suitable antibiotics to prevent cystitis.

5. Postoperative cystoscopic examination and bladder pressure study were done on those patients having a persistent urinary retention in order to determine the cause.

6. Transurethral resection was performed on all in whom there was an associated prostatic hypertrophy not discovered preoperatively.

7. Intravenous pyelograms were made 1 to 2 months postoperatively to determine the final status of the ureters and kidneys. (Arch. Surg,, Oct. 1953, G. O. Baumrucker, M. D. and J. W. Shaw, M. D. ; Department of Urology, Veterans Administration Hospital, Hines, Ill.)

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Prostatic Calculi

There are two general types of prostatic calculi: the endogenous or true calculi and the exogenous or false calculi. True prostatic calculi are much more common and develop within the substance of the prostate gland.

True prostatic calculi are almost always multiple and vary in size from millet seed or smaller to pea-sized. The very small, almost microscopic, calculi are not visualized on x-ray and are often encountered during transurethral prostatic resection. This rather common experience emphasizes again the relatively high incidence of this condition. Prostatic calculi are dark brown in color and are usually irregular in shape, sometimes containing many definite facets. They are found within the substance of the prostate gland most commonly in the acini and ducts. Extrusion of the calculi into the stroma of the gland may occur. Complete block of the ducts by calculi may produce cystic dilatation of the corresponding acini with the formation of a pseudodiverticulum, containing other calculi. In some instances the calculi are located near the opening of the ducts just beneath the mucosa of the prostatic urethra and may be seen cystoscopically. They are occasionally extruded into the lumen of the urethra and may be voided spontaneously or fall backward into the bladder to act as a nucleus for the formation of bladder calculi. These appear usually as multiple small, brownish calculi, cuboidal in shape, and lie in the bas-fond of the bladder. In the presence of benign prostatic hypertrophy, prostatic calculi are usually found posteriorly at the periphery between the adenoma and the false capsule. They may become imbedded in the substance of the false capsule so that they may be left behind in the prostatic bed after enucleation.

False or exogenous prostatic calculi are relatively rare and differ basically from true calculi. False calculi form in the prostatic urethra and do not primarily involve the prostate gland. They may be derived from calculi originating in the upper urinary tract or from true prostatic calculi which have been extruded and become lodged in the prostatic urethra. They

may also form within the prostatic bed following any type of prostatectomy and protrude into the bladder itself in the shape of a dumbbell which has given rise to the term "dumbbell calculus" in the older urologic literature. False prostatic calculi are usually single and with the constant deposition of calcium salts from the urine may reach a very large size; the so-called giant prostatic calculus. This usually produces some degree of bladder neck obstruction and, as a rule, requires surgical intervention.

A study of 48 patients with prostatic calculi is presented. This series comprises 46 patients with true prostatic calculi and 2 patients with false prostatic calculi.

True prostatic calculi occur predominantly in individuals above the age of 50 although 15% of the patients in this series were in the fifth decade.

Associated prostatic disease is frequent. Either chronic prostatitis or benign prostatic hypertrophy was present in 78% of the patients with true prostatic calculi. Coexistent carcinoma and calculi occurred in 1 patient.

The diagnosis of true prostatic calculi by rectal examination can be made in relatively few instances. The only reliable method of diagnosis is the x-ray film. A plain film should be obtained in all patients with prostatic symptoms.

True prostatic calculi may be asymptomatic (17%), cause mild symptoms (47%), or produce moderate to severe symptoms (35%).

The most common presenting complaint of the patients in this series was some type of urinary dysfunction. Other symptoms included backache, suprapubic or perineal discomfort, pyuria, hematuria, and hemospermia. It is believed that in most cases the symptomatology is a reflection of the associated benign hypertrophy or prostatitis. Those patients with true prostatic calculi but without associated prostatic disease were usually asymptomatic or had very mild transient complaints. It is only in the infrequent case with very large and numerous prostatic calculi that the symptoms may be ascribed to the calculi per se.

In most patients with prostatic calculi, therapy is indicated primarily for the associated pathology in the prostate rather than for the calculi. In this series 35% received no therapy, 43% were treated with prostatic massage and medication, and 22% had surgery performed. A total of 78% did not require any operative procedure.

Surgery was performed for 2 groups of cases; those patients with an associated prostatic hypertrophy of a sufficient degree to cause obstructive symptoms and those with very large and numerous prostatic calculi.

The choice of operative procedure depends primarily on the degree of enlargement of the associated prostatic hypertrophy. Transurethral resection is reserved for small glands that can be resected down to the capsule. Larger glands should be enucleated either retropubically or perineally together with excision of portions of the posterior prostatic capsule when

indicated. In this series 5 patients had a transurethral resection and 5 patients had a retropubic prostatectomy and prostatolithotomy. (Surg., Gynec. & Obst., Nov. 1953, D. Presman, M. D., Michael Reese Hospital, Chicago, Ill.)

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Corrective Surgical Planing of Skin

It has been reported that sandpaper abrasion of the skin is an effective method for the correction of acne scars and tattoo marks. As a routine treatment, however, it was considered that this procedure had certain inherent drawbacks.

In the first place, administration of a general anesthetic, with the known risk involved, may not be advisable in a reconstructive operation. The inhalation apparatus interferes on the facial area, which, of course, is the most common operative site.

Secondly, sandpaper presents a relatively broad surface which makes it difficult to treat irregular contours and does not permit differential abrasion of adjacent areas. The possibility of silica granulomas caused by small buried particles must be considered as a calculated risk.

Despite these disadvantages, the clinical benefit in the reported cases was such as to warrant further experiment with the abrasion technique. After 5 years of trial, a successful modification has been developed which eliminates many of the above disadvantages. This modification provides a simple office procedure done under local anesthesia which employs a safe abrading device and which permits delicate control in a bloodless field.

Two hundred and seventy-three cases are reported, some followed for as long as 4 years, in which the above goals were approached.

In all cases, except 1, healing occurred without complication. In this case, erythema of the treated parts persisted for several months and finally cleared. This may have been caused by excessive refrigeration.

The healed skin is soft and pliable. It is fresh in appearance and has shown no evidence of cicatrization. There has been no evidence of margination, and skin pigment has returned to normal in this entire series of white patients. Several darker-skinned patients of Latin descent have been treated, with no occurrence of pigmentary change.

The cases have been followed since March 1949. The skin has remained well, and there has been no regression of appearance. Many of the patients treated have been observed for at least 2 years and confirm the observation on the permanence of the results.

The following skin defects have been satisfactorily treated: acne scars, smallpox and chickenpox scars, superficial epitheliomas, keratoses, tattoos, wrinkles, keloids, elevated and depressed scars (traumatic), adenoma sebaceum, burn scars, nevi, and lichenifications.

At no time does the healed skin have the glazed, firm appearance of scar tissue. The number of treatments on any one area has been arbitrarily limited to four. The optimal intervals between treatments has been established by trial at about 4 weeks.

From the point of view of the patient, corrective surgical planing has been greeted by an overenthusiasm, even in those cases which, when viewed objectively, results have not been better than the usual 60 to 80% improvement. In many cases, despite pressure from the patient, further work was discontinued when it was believed that the magnitude of the procedure outweighed the possible benefits. The possibility of persistent skin irritability, caused by too many operations as has been reported to have occurred after sandpapering, must be kept in mind. (Arch. Dermat. & Syph., Oct. 1953, A. Kurtin, 945 Fifth Ave., New York 21, N. Y.)

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Traumatic Pancreatitis

Traumatic pancreatitis, characteristically a disease resulting from injury incurred in collisions of vehicles, is increasing as traffic accidents increase. Because this potentially lethal condition is often overlooked as a diagnostic possibility and in light of the fact that in many instances actions at law for compensation for damages hinge upon the diagnosis, all clinicians should be well informed regarding the diagnosis and treatment of this condition.

Frequently noted in the history of traumatic pancreatitis is impact of the epigastric area of the patient with the steering wheel of a car in head-on collision. Pancreatic injury may also occur when an erect pedestrian is struck across the epigastrium by the front fender of a car or when a pedestrian is knocked down by an automobile and a wheel passes over the epigastrium. Cyclists involved in accidents are peculiarly liable to pancreatic injury, the blow to the abdomen being delivered by the handlebars.

Pancreatic contusion is generally believed to involve rupture of minor or major components of the duct apparatus with consequent effects due to activity of liberated enzymes. The area of the pancreas most likely to be damaged as a result of a blow or crushing force is that which overlies the vertebrae. Although the middle segment of the pancreas is the most vulnerable, injuries of the head and the tail do occur. In the series reported, there were 2 instances of injury to the tail of the organ, with associated rupture of the spleen in both. Because rupture of the ducts is usually within the pancreas rather than open laceration, it may be overlooked at operation. Because of the fact that injury to the pancreas commonly is masked at the time of operation by retroperitoneal hematoma, it is advisable to consider such a lesion presumptive evidence of pancreatic injury.

Acute onset of abdominal pain following a blow to the abdomen is typical of traumatic pancreatitis. The pain is usually generalized but greatest in the epigastrium, and it may radiate through or around to the back on either side. Sometimes it is so severe as to cause suspicion of rupture of a hollow viscus. Nausea and vomiting follow and are usually persistent and may be accompanied by manifestations of shock. Upper abdominal tenderness and rigidity are characteristic and usually followed by distention. Peristalsis is decreased or absent. These symptoms are not diagnostic of pancreatic injury, for injury to viscera in the same general area may cause similar symptoms. However, if only the pancreas is involved, tenderness usually is restricted to a transverse zone across the mid-epigastrium. If hyperamylasemia is noted by laboratory study, a diagnosis of traumatic pancreatitis can be made tentatively. It is necessary to make sure there are no other injuries requiring laparotomy.

A particularly confusing differentiation is that between traumatic pancreatitis and retroperitoneal rupture of the duodenum. Differentiation is essential because duodenal rupture demands immediate surgical correction. The two lesions may coexist. Traumatic rupture of the duodenum like traumatic pancreatitis often follows a blow to the upper abdomen and the serum amylase may be elevated due to escape of pancreatic secretion from the duodenum into the retroperitoneal space and its subsequent absorption into the blood. An x-ray film of the abdomen may be helpful in differentiation. Retroperitoneal rupture of the duodenum may produce gas in the retroperitoneal tissues appearing either as diffuse emphysema or as gas along the right psoas muscle. In traumatic pancreatitis there may be distention of a segment of the bowel, either of the transverse colon or the upper jejunum, due to enzymatic mesenteritis. If duodenal rupture is suspected but no evidence of retroperitoneal gas can be seen in the x-ray film, Lipiodol should be injected through an inlying nasogastric suction tube and another film taken to determine the presence or absence of extraluminal Lipiodol. Barium sulfate should not be used as a contrast medium because of its objectionable features as a foreign body. When the area is visualized at laparotomy, either lesion may be associated with retroperitoneal hemorrhage that masks the visceral injury. However, the hemorrhage may be slight, and with either lesion there may be greenish edema fluid in the upper retroperitoneal tissues.

When clinical features logically suggest pancreatic trauma, it is mandatory that the presence or absence of hyperamylasemia be established. This is most satisfactorily accomplished by making several measurements of the amylase content of the blood. If renal function is unimpaired, the urinary diastase content will indicate the amount of amylase in the blood. If possible, both tests should be carried out. Such observations are of importance in even relatively mild injuries, to establish for medico-legal reasons that such injury has occurred.

Traumatic pancreatitis will heal spontaneously unless there is persistent leakage of some part of the duct system. Sufficient leakage will lead to the formation of a pseudocyst ("pancreatic collection"), almost always in the lesser omental bursa. The dynamic activity of the collection may be mild to severe, depending upon the amount of leakage. Surgical drainage must be carried out.

Nonoperative management is preferable for uncomplicated traumatic pancreatitis. The essentials of this regimen are the same as for spontaneous pancreatitis: nasogastric suction, and maintenance of fluid and electrolyte balance by intravenous therapy and the use of anticholinergic drugs. A "wide spectrum" antibiotic should be given. Demerol is the drug of choice for control of pain. (California Med., Oct. 1953, C. J. Berne, M. D., and R. L. Walters, M. D.; Department of Surgery, University of Southern California, Los Angeles, Calif.)

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Gastroduodenal Hemorrhage

There are few problems confronting the internist more vexing yet more intriguing than that of recurrent bleeding from the upper gastrointestinal tract where repeated diagnostic studies fail to disclose the source of hemorrhage. In some cases a definitive lesion is not found despite repeated exploratory operations, and occasionally the mystery remains unsolved even at post-mortem examination.

Most frustrating and bewildering to the clinician, however, are the cases in which lesions presumed to be the cause of hemorrhage are detected by roentgenogram or gastroscopy, yet at operation the surgeon reports that "after palpation and a detailed inspection of the stomach and small intestine no pathology or cause for hemorrhage was found." To judge from the dearth of reports in the literature to the contrary, the surgeon's verdict must be considered final as to the presence or absence of gross gastric or duodenal lesions regardless of the roentgenogram or gastroscopic findings. Palpation and inspection of the stomach in the open abdomen provide a far more accurate appraisal of gross pathology than does the roentgenogram, because perigastric adhesions, large but otherwise normal mucosal folds, congenital anomalies, or pressure from adjacent organs can produce roentgenologic defects which mimic many hemorrhage-producing lesions. Thus to dispute the operative findings of an experienced surgeon is usually hazardous.

This article shows that palpation and inspection of the stomach or duodenum at laparotomy are not infallible, and that occasionally major pathologic lesions may be overlooked even when the mucosal surface is examined.

The patients in this series shared several features in common. All had had recurrent episodes of bleeding from the upper gastrointestinal tract, the site of which was localized by roentgen-ray or gastroscopy, yet at opera-

tion the clinical diagnosis was discounted on the basis of negative surgical findings at the site indicated. Nevertheless, the original diagnosis was substantiated in each instance at a subsequent operation.

Errors of the type described in this article usually occur when operation is done after bleeding has stopped. They stem from several causes. More than one lesion may be present, each of which may be a potential source of hemorrhage, and removal of one does not prevent recurrence of bleeding from the other. The most common example of this, perhaps, is the recurrence of bleeding shortly after a subtotal gastrectomy for duodenal ulcer, when an undiscovered lesion was left behind in the gastric stump. Soft tumors, even though large, may not be palpable through the thick wall of the stomach, particularly in the cardia, where good exposure through an abdominal approach is not always possible. Thus in one case a hiatus hernia was readily found, while a large soft tumor in the immediate vicinity could not be felt by the surgeon; and in another case an antral gastritis attracted the surgeon's attention, while a carcinoma in a less accessible region could not be palpated. A superficial spreading carcinoma may be impalpable from the surface of the stomach, and even when the stomach is incised may be difficult to differentiate from gastritis.

There is no single or simple formula for the surgical management of cases of recurrent hemorrhage where roentgenogram and endoscopic studies are repeatedly normal. However, it would appear imperative that no roentgenogram or gastroscopic finding be ignored, regardless of the absence of a palpable pathologic lesion. Gastrotomy, duodenotomy, and biopsy of mucosa which presented suspicious changes on roentgenogram or gastroscopy should be done in all cases where no obvious source for hemorrhage is found, because these procedures do not materially increase surgical mortality. The limitation of the surgeon's ability to detect pancreatic or biliary tract disease by palpation alone is well known, but its application to gastric disease has been less publicized.

Finally, just as the preoperative management of gastrointestinal bleeding requires the combined talents of the internist and surgeon, this teamwork may be extended to the operating room with advantage. Unfortunately, in the large majority of cases the internist responsible for the management of the patient during the diagnostic phase is rarely present at the operation, or at best attends as a silent bystander.

Five cases of recurrent bleeding from the upper gastrointestinal tract are presented. The site and presumptive cause of hemorrhage were determined by roentgenogram or gastroscopy in each case preoperatively, yet at operation, the surgeon was unable to corroborate the clinical diagnosis. In 1 case a hiatus hernia was repaired, in another antral gastritis was excised, while in 3 cases no cause for bleeding was found. Owing to recurrence of hemorrhage, a second operation was required in each case, at which time the original preoperative diagnoses were confirmed. In 4 cases a second operation would have been unnecessary had the stomach been opened for

inspection at the site where pathologic changes had been noted on roentgenogram or gastroscopy. (Ann. Int. Med., Oct. 1953, 4200 Pine St., Philadelphia 4, Pa., E. M. Rappaport)

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Reactions Following Antirabies Prophylaxis

Neuroparalytic accidents occurring as a result of administration of rabies vaccine constitute a real problem in the prophylactic program against rabies. These reactions range in severity from minimal transient disability to those producing death. Because the cause is still not well understood and specific treatment is lacking, further study of the problem was believed justified. In this article, data on 16 patients who had untoward reactions to rabies inoculation are reported. In addition, 3 patients were treated with corticotropin (ACTH), and data on these are reported in detail, because the results seemed promising enough to recommend further trial.

The exact cause of the reactions which occur from antirabies vaccine has not been definitely established. Several theories have been advanced. Of these, one stands out as the most probable because of the experimental evidence associated with it. This theory states that a constituent of normal nervous tissue is the cause of the neuroparalytic accident. The mode of action of this normal constituent of nervous tissue present in the vaccine upon the nervous system of the patient receiving the vaccine is as yet unknown.

Injections of normal homologous or heterologous brain tissue into rabbits resulted in the animals presenting untoward symptoms. Some rabbits died in convulsions after 4 to 5 injections, and paralysis developed in others.

Kabat, Wolf, and Bezer inoculated healthy young Macacus rhesus monkeys with phenolized emulsions of adult rabbit and monkey brain to which Freund adjuvants (paraffin oil and dried tubercle bacilli) were added. Three injections were given intramuscularly at weekly intervals. Ataxia, monoplegia, quadriplegia, ocular paralysis, or tremors usually occurred in the monkeys after about 3 to 4 weeks. This symptomatology could not be reproduced when rabbit-lung tissue or fetal rabbit brain free of myelin plus the paraffin oil and dried tubercle bacilli were given.

Wakesman and Morrison have shown that the mechanism of action of the normal constituent of homologous nervous tissue is a tuberculin type sensitivity directed at one or more elements of the nervous tissue of the rabbit (the experimental animal). They demonstrated in experimental isoallergic encephalomyelitis that intracutaneous tests with homologous spinal cord suspended in saline gave reactions having the gross and histologic characteristics of the tuberculin response. This skin reactivity could not be passively transferred with large amounts of serum. In addition the

development of skin reactivity was correlated with the development of experimental encephalomyelitis, both in degree and in time.

Two other investigators, Olitsky and Tal, have shown that the proteolipids A and B of Folch and Lees (normal constituents of bovine brain tissue) plus Freund adjuvants are capable of bringing about acute disseminated encephalomyelitis in mice indistinguishable from that induced by inoculation of whole brain tissue. Proteolipids A and B of Folch and Lees contain practically all of the encephalitogenic agent present in brain. These proteolipids A and B plus Freund adjuvants, when injected intradermally, showed a weakly positive skin reaction in rabbits having experimental encephalomyelitis induced by injection of homologous spinal cord tissue. These positive skin reactions were also shown to be of a tuberculin type.

The intradermal skin test was studied in an attempt to see if there is a correlation between skin sensitivity and reaction to the vaccine. All patients among the 7 treated who had a clinical reaction to rabies vaccine were found to have a positive skin reaction. Among 45 people who were skin-tested on the tenth to fourteenth day of treatment with vaccine and also had no clinical reaction, 60% had a positive skin test. On the other hand, 39 patients who had never received rabies vaccine had no reaction to the skin test. It can be concluded, therefore, that skin sensitivity occurs in a large percentage of persons vaccinated and that only a small percentage of these have systemic symptomatology. However, all patients with vaccine reaction to date have exhibited skin sensitivity. In addition to the skin sensitivity, 4 of the patients had extensive erythema and induration of the buttocks. This, too, may have been an indication of sensitivity. However, because of the large number of patients with positive skin tests and/or induration and erythema of the buttocks without fever or symptoms of neurological reaction, these findings are not at present a contraindication to receiving further vaccine.

Because corticotropin had been shown to have anti-inflammatory activity in many situations, including experimental encephalomyelitis, it was believed that it should be tried in rabies inoculation reactions. Among the 3 patients treated with corticotropin, 2 made rather surprising and rapid improvement and were left with minimal residue. The third patient received small doses of corticotropin quite irregularly and late in the disease and derived no definite benefit.

On the other hand, of the 5 patients who did not receive corticotropin, 1 died. The other 4 had such minimal signs and symptoms it was believed that the drug was not indicated.

Because of the variability of the course of this condition one cannot be sure of the effectiveness of the hormone from the study of several patients, and further evaluation of its usefulness is indicated to see whether there is definite merit.

Even though 4 patients who had reactions without neurologic signs received 1 or 2 doses of vaccine after the onset of symptoms, 5 others did have progression when further therapy was given. For this reason the

authors believe that vaccine should be stopped immediately upon the appearance of the following symptoms that are otherwise unexplained: fever, headache, emesis, anorexia, radicular pain, generalized weakness, and weakness of the legs. (Am. J. Dis. Child., Oct. 1953, N. H. Blatt, M. D., and M. H. Lepper, M. D.; Chicago Board of Health, Municipal Contagious Disease Hospital Section, Chicago, Ill.)

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Nonspecific Tuberculin Sensitivity

It is apparent that the time has come for wider consideration of the proposition that tuberculin sensitivity in human beings is very often not due to tuberculous infection. The veterinarians have identified the so-called "no-lesion reactor" in cattle--tuberculin-sensitive animals that have no sign of tuberculosis on autopsy; and study of the problem has shown that tuberculin sensitivity may be caused by infection with nonpathogenic organisms as well as with virulent tubercle bacilli. It now appears that there may be, at least in some localities, a human counterpart of the no-lesion reactor in cattle.

This article discusses the specificity of tuberculin sensitivity in human populations. It illustrates how epidemiologic-statistical evidence leads directly to the conclusion that most of the sensitivity brought out only by strong doses of tuberculin is not caused by tuberculous infection, at least not by the same organism or by the same mode of infection responsible for tuberculous disease in human beings. This conclusion, supported by the findings of several previous studies, challenges the traditional assumption that all tuberculin sensitivity is necessarily of tuberculous origin and postulates the existence of at least 2 main sources of tuberculin sensitivity in human beings.

Material for this study was derived from a long-range cooperative tuberculosis research program begun 10 years ago by the Public Health Service. Starting with the students in a small number of nurses' training schools in different parts of the country, the program was extended to include all, or nearly all, of the training schools in the metropolitan areas of Baltimore, Columbus (Ohio), Denver, Detroit, Kansas City, Los Angeles, Minneapolis, New Orleans, Philadelphia, and San Francisco. Details of the organization, scope, and methods of the work were given in previous reports. Material for this report includes tuberculin test results, inquiries about previous contact with tuberculosis, and all places of residence since birth.

More than 22,000 young women who entered 76 schools of nursing throughout the United States between 1943 and 1949 were tuberculin tested with 2 doses (0.0001 mg. and 0.005 mg.) of PPD and answered questionnaires on history of contact with tuberculosis and on all places of residence since birth.

Analysis of the material shows the frequency of first-dose reactors to increase, as expected, with increasing degree of contact with tuberculosis: from approximately 10% positive in the group reporting no contact to 20% in those with intermediate, and 40% in those reporting close, contact. Yet, the average sizes of the reactions did not vary with degree of contact. Increased exposure simply affects the frequency, not the intensity, of first-dose sensitivity. Moreover, place of residence does not affect the relation between contact and first-dose sensitivity.

In contrast, the frequency of second-dose reactors, expressed as a percentage of those negative to the first-dose test, is shown to be entirely independent of degree of contact, but closely related to place of residence. Nearly 70% of the permanent residents of the southeastern states were positive to the second dose, compared with less than 30% in the rest of the country, regardless of whether they were classified as having had close, intermediate, or no contact with tuberculosis. Furthermore, 40% of those from the southeast had reactions exceeding 9 mm. in diameter, compared with 12% from the north and west.

The results of this study, together with previously published material, are consistent with the hypothesis that tuberculin sensitivity in human beings can no longer be regarded as being derived from a single source. Most reactions elicited by a low-dose intradermal test (approximately 0.0001 mg. of PPD) undoubtedly indicate specific infection with virulent tubercle bacilli, spread by personal contact. Low degrees of sensitivity brought out only by large doses (1 mg. of OT or 0.005 mg. of PPD, for example) apparently represent infection by a different organism with a different mode of transmission. The latter (unidentified) organism must be antigenically related to the tubercle bacillus, highly prevalent in certain geographic areas, and apparently nonpathogenic for human beings. (Am. Rev. Tuberc., Nov. 1953, 1790 Broadway, New York 19, N. Y., C. E. Palmer)

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Commendations

Commendations from the Chief of Naval Personnel were recently received by Naval Reserve Dental Companies 9-29 of Lincoln, Nebr., and 6-1 of Atlanta, Ga., for being evaluated outstanding Naval Reserve companies by the Commandants of their respective naval districts. Commander Harold P. Hellweg (DC) USNR, commands Reserve Dental Company 9-29, and LCDR Thomas J. Hicks, Jr. (DC) USNR, commands Reserve Dental Company 6-1. (TIO, BuMed)

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Fleet, Force, Type, and Staff Medical Officers and District Medical Officers

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Third Naval District	RADM F. R. Moore (MC) USN
Fourth Naval District	CAPT J. N. C. Gordon (MC) USN
Fifth Naval District	CAPT H. L. Goff (MC) USN
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Ninth Naval District	RADM C. A. Swanson (MC) USN
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COMEASTSEAFRONTIER	RADM H. R. Delaney (DC) USN
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CNABTRA	CAPT D. L. McKee (DC) USN
CNARTC	CAPT C. E. Allen (DC) USN
CNATTC	CAPT S. W. Brown (DC) USN
CNAATC	CAPT R. E. Blair (DC) USN

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From the Note Book

1. Rear Admiral Lamont Pugh, Surgeon General of the Navy, has been elected to serve as a member of the Board of Governors of the Clinical Congress of the American College of Surgeons. (TIO, BuMed)

2. Lieutenant J. H. Snyder (DC) USN has received the Bronze Star Medal with Combat "V". This decoration was awarded to LT Snyder by the Commanding General, 1st Marine Division (Reinforced), Fleet Marine Force, for meritorious achievement in connection with operations against the enemy while serving with a Marine infantry regiment in Korea from Nov. 25, 1952 to July 31, 1953. (TIO, BuMed)

3. The Bureau of Medicine and Surgery presented 6 scientific exhibits before professional meetings during the month of November 1953. Three exhibits were shown at the Sixtieth Annual Meeting of the Association of Military Surgeons held in Washington, D. C., Nov. 9-11, 1953. The exhibits were "Body Armor," "Medicine and Research in Diving," and "Electroencephalography in Combat Head Injuries." The Navy's "Career Plan for Dental Officers" was scheduled for display at the New Orleans Dental Conference held in New Orleans, La., Nov. 8-11, 1953. A new exhibit, "Ectopic Development of Malarial Parasites in the Mosquito," was shown at the Second Annual Meeting of the American Society for Tropical Medicine and Hygiene in Louisville, Ky., Nov. 12-14, 1953. The "U. S. Naval Dental Corps Casualty Treatment Training Program," an exhibit featuring some of the training aids developed by the Naval Dental School, NNMC, Bethesda, Md., was scheduled for presentation at the Twelfth Annual Mid-Continent Dental Congress, held in St. Louis, Mo., Nov. 16-18, 1953. (TIO, BuMed)

4. Dr. George Wald, one of the scientific investigators working under a contract between the Physiological Psychology Branch, ONR, and Harvard University, is one of five individuals to receive the Eighth Annual Albert Lasker

Award for his achievement in medical research. Dr. Wald has been able to reproduce in vitro all of the chemical processes which occur in vivo in the retina in the bleaching of the visual purple and the reversible reactions in its transformation into retinene and vitamine A. Also he has been able to identify the chemical composition of the various pigments of the retina and choroid and to show how these light-absorbing materials affect color perception. (TIO, ONR)

5. Dr. J. R. Porter, Chairman of the Department of Bacteriology, School of Medicine, University of Iowa, has been appointed Chairman of the Office of Naval Research Advisory Panel for Microbiology. In addition to Dr. Porter, members of this Advisory Panel for Microbiology are: Dr. W. J. Cromartie, University of North Carolina; Dr. N. F. Conant, Duke University; Dr. Emil Mrak, University of California; Dr. H. R. Morgan, University of Rochester; Dr. W. J. McElroy, The Johns Hopkins University; and Dr. H. P. Treffers, Yale University. (TIO, ONR)

6. The following naval medical officers have recently been certified in their specialities: LT J. F. Morrell (MC) USN, American Board of Dermatology and Syphilology; LT W. E. Purnell (MC) USNR, American Board of Radiology; LT J. B. Stith (MC) USNR, American Board of Obstetrics and Gynecology; LT S. J. Baum (MC) USNR, American Board of Otolaryngology; LCDR M. F. Sherrill (MC) USN, LCDR L. W. Fix (MC) USN, and CDR G. E. Meador (MC) USN, American Board of Pathology; LT R. B. Walker (MC) USNR, LT A. J. Decker (MC) USNR, LT H. A. Flanders (MC) USNR, LT H. O. Mott (MC) USNR, and CAPT A. L. Lawler (MC) USN, American Board of Internal Medicine; LT L. K. Branch (MC) USNR and LT J. Imburg (MC) USN, American Board of Pediatrics; and LTJG D. J. Cluskey (MC) USNR, American Board of Ophthalmology.

7. The Committee on Civil Defense of the Maine Medical Association and the Civil Defense authorities for the state of Maine have completed state, county, and city organization and operation plans for special weapons defense. These plans are divided into 3 sections, Biological Defense, Chemical Defense, and Radiological Defense. These plans are being published as samples for those states that have not as yet completed this phase of medical civil defense planning. (Organization Section, J. A. M. A., Oct. 31, 1953)

8. Anthropometric measurements of British children aged from 5 to 13 years made between 1880 and 1947 have been examined. The average stature and weight have increased by from 2.5 to 3.5 inches and from 4 to 11 pounds respectively over this period, the increases being greatest in the older children. (Brit. M. J., Oct. 24, 1953, E. M. B. Clements, M. B., B. S., University of Birmingham)

BUMED NOTICE 6700 29 Oct 1953

From: Chief, Bureau of Medicine and Surgery
To: All Continental Stations Having Medical Corps Personnel Regularly Assigned

Subj: Report of Medical Equipment Utilizing Medicinal Gases and Availability of Gas Cylinders Drilled for use with "Pin Index Safety System for Flush Type Cylinder Valves"

This notice promulgates instructions for submission of a report by medical activities that utilize certain items of medical equipment. The information provided will assist the Bureau in the establishment of the Pin Index Safety System as a mandatory safety measure in continental medical activities at the optimum date consistent with the availability of Pin Index drilled medicinal gas cylinders.

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BUMED NOTICE 12160 6 Nov 1953

From: Chief, Bureau of Medicine and Surgery
To: BuMed Management Control Activities

Subj: Group IVa positions held by incumbents with contingency

This notice requests up-to-date information on the number of Group IVa positions held by incumbents with contingency.

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BUMED INSTRUCTION 6150.13 12 Nov 1953

From: Chief, Bureau of Medicine and Surgery
To: Ships and Stations Having Medical-Dental Personnel Regularly Assigned

Subj: Dental Folder (DD Form 722-1); general information concerning

This instruction announces adoption of a new Dental Folder, which will serve as filing jacket for the Dental Records, including Standard Form 603 and NavMed H-4. This instruction pertains to Dental Folders for all members of the Navy and Marine Corps, including organized components of the Navy and Marine Corps Reserve. This instruction is effective and will be implemented as soon as practicable after receipt of the Dental Folders

(DD Form 722-1), which will be available upon requisition from appropriate district publications and printing offices in January 1954.

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BUMED NOTICE 6120 12 Nov 1953

From: Chief, Bureau of Medicine and Surgery
To: All Stations Having Dental Personnel Regularly Assigned

Subj: Dental examinations for personnel being separated from active duty

Ref: (a) Art. 6-116(9), ManMedDept

Dental Examination and Treatment Records, NavMed-1299, need not be prepared for naval and Marine Corps personnel at the time of separation from active duty.

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